northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	April 9, 2010	Incident type: breakdown/ upset/startup or shutdown	Shutdown
Start Date	April 10, 2010	Start Time:	12:00 PM
End Date	April 11, 2010	End Time:	6:00 PM
Process unit or system(s): SRU4			

Incident Description

On April 10 at around midnight the SRU4 was shutdown for a planned maintenance turnaround. The SO2 emissions went high during the final sweep and cool down to prepare for unit entry. During this sweep period the 250-ppm SO2 12-hr rolling average was exceeded, which is a normal part of shutdown. On April 11 at approximately 5:20 AM operations was notified of higher than normal SO2 levels in the Incinerator. Operations was performing the procedural steps to steam the absorber and stripper tower to the flare header, which began at about 5:00 AM. When the high readings occurred, operations evaluated the activities of the night and decided to stop the steaming of the absorber. Once the pressure dropped in the absorber the SO2 numbers dropped but not fast enough to keep the SO2 1-Hr avg from hitting the 1000-ppm corrected to 7% excess O2 limit. It was found out later that water had built up in the system, causing backpressure and forcing flow to the incinerator. To prevent a reoccurrence, the steaming procedure was reviewed with operations personnel and additional wording will be added to capture learnings about draining low points.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

All AAG feed was routed to SRU3.

Applicable air operating permit term(s): 5.8.15 & 4.11

Estimated Excess Emissions: Based on SO2 CEMS and calculated stack flow	Pollutant(s): SO2	Pounds (Estimate): 456

The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☒ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☒ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

☒ No
☐ Yes (provide details below)

Root and other contributing causes of incident:

The excess emissions related to the 250-ppm 12-hr average are part of normal startup and are unavoidable. The excess emission related to the 1000-ppm SO2 1-hr average corrected to 7% excess air was due to water buildup in the system.

The root cause of the incident was:
(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

☒ Identified for the first time
☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

☒ No
☐ Yes (describe below)

Unit shutdown emissions that are part of normal shutdown are unavoidable. The excess emissions associated with the water buildup may not meet the exemption.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2
Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

To prevent a reoccurrence, the steaming procedure was reviewed with operations personnel and additional wording will be added to capture learnings about draining low points.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒No ☐Yes
Is the source requesting additional time for completion of the report? ☒No ☐Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Jason Smolsnik__ Date: ___April 19, 2010

Responsible Official or Designee: Susan G Kreiner Date: 5/27/10